

What is claimed is:

1. A method of reducing microjog errors in a disk drive including a data recording disk having data tracks and a transducer head positionable on the tracks, wherein the head includes a writer element offset from a reader element, the method comprising the steps of:

5 measuring track squeeze at a number of locations along multiple tracks in a set of tracks, wherein the squeeze is due to mis-positioning of the tracks relative to one another;

 providing a microjog distance for a destination track in the set of tracks;

 calculating a microjog correction value for the destination track based on
10 the measured track squeeze;

 applying the correction value to the microjog distance to obtain a corrected microjog distance.

2. The method of claim 1, wherein the step of calculating a microjog correction value based on the track squeeze includes the steps of:

 fitting the measured squeeze values to a polynomial curve using a least squares fit algorithm;

5 determining the polynomial coefficients; and

 calculating the microjog correction value based on the location of the destination track location and the polynomial coefficients.

3. The method of claim 2, wherein the step of calculating the microjog correction value further includes the steps of calculating track squeeze based on the location of the destination track location and the polynomial coefficients, and calculating the microjog correction value as a function of the calculated track squeeze.

4. The method of claim 3, wherein the step of applying the correction value to the microjog distance further includes multiplying the calculated track squeeze with the microjog distance to obtain the corrected microjog distance.

5. The method of claim 1, wherein the step of providing a microjog distance for the destination track includes the steps of determining a microjog profile for the destination track.

6. The method of claim 5, wherein the step of applying the correction value to the microjog distance includes the steps of applying the correction value to the microjog profile to obtain a corrected microjog profile for the destination track.

7. The method of claim 1, wherein the step of measuring track squeeze includes the steps of measuring an amount of said track mis-positioning.

8. The method of claim 7, wherein the step of measuring the amount of said track mis-positioning includes the steps of measuring written in runout (WRO) in each of said multiple tracks that represent said track mis-positioning.

9. The method of claim 8, wherein the tracks include a plurality of servo wedges embedded therein, each servo wedge including a plurality of circumferentially sequential, radially offset servo bursts, such that the steps of measuring the WRO in each of said multiple tracks further includes the steps of:

- 5 positioning the head over the track;
- reading the servo bursts in each servo wedge as they pass under the head, to generate readback signals;
- measuring burst signal values of the servo bursts from the head readback signals;
- 10 selecting a plurality of the servo bursts, and obtaining combinations of the burst signal values of the selected servo bursts to generate one or more burst phases; and
- determining a WRO value for each servo wedge based on said burst phases, indicating written in runout of the servo bursts relative to neighboring tracks.

10. The method of claim 9, wherein the WRO value is a function of track spacing.

11. The method of claim 10, wherein the WRO comprises an orthogonal combination of said burst phases.

12. A positioning system comprising:

 a disk including multiple tracks, each track having servo information and data;

a head including a reader element and a writer element; and
5 a controller that performs head microjogging on a destination track, such that the destination track is squeezed due to mis-positioning relative to neighboring tracks, wherein the controller microjogs the head by:
determining a microjog distance for the destination track;
calculating a microjog correction value based on amount of track
10 squeeze; and
applying the correction value to the microjog distance to obtain a corrected microjog distance that reduces microjog errors due to track squeeze.

13. The positioning system of claim 12, wherein the controller calculates the microjog correction value based on the track squeeze by fitting measured squeeze values to a polynomial curve using a least squares fit algorithm, determining the polynomial coefficients and calculating the microjog correction value based on the location of the
5 destination track location and the polynomial coefficients.

14. The positioning system of claim 13, wherein the controller calculates the microjog correction value by calculating track squeeze based on the radial location of the destination track location and the polynomial coefficients, and then calculates the microjog correction value as a function of the calculated track squeeze.

15. The positioning system of claim 14, wherein the controller applies the correction value to the microjog distance by multiplying the calculated track squeeze with the microjog distance to obtain the corrected microjog distance.

16. The positioning system of claim 12, wherein the controller determines the microjog distance for the destination track by determining a microjog profile for the destination track.

17. The positioning system of claim 16, wherein the controller applies the correction value to the microjog distance by applying the correction value to the microjog profile to obtain a corrected microjog profile for the destination track.

18. The positioning system of claim 12, wherein the controller determines track squeeze by measuring track squeeze at a number of locations along multiple tracks in a set of tracks, wherein the squeeze is due to mis-positioning the tracks relative to one another.

19. The positioning system of claim 18, wherein the controller measures track squeeze by measuring the amount of said track mis-positioning.

20. The positioning system of claim 19, wherein the controller measures the amount of each track mis-positioning by measuring written in runout (WRO) in each track that represent said track mis-positioning.

21. The positioning system of claim 20, wherein the tracks include a plurality of servo wedges embedded therein, each servo wedge including a plurality of circumferentially sequential, radially offset servo bursts, such that controller measures the WRO in each of the multiple tracks by:

5 positioning the head over the track;

 reading the servo bursts in each servo wedge as they pass under the head,
to generate readback signals;

 measuring burst signal values of the servo bursts from the head readback
signals;

10 selecting a plurality of the servo bursts, and obtaining combinations of the
burst signal values of the selected servo bursts to generate one or more burst phases; and
 determining a WRO value for each servo wedge based on said burst
phases, indicating written in runout of the servo bursts relative to neighboring tracks.

22. The positioning system of claim 21, wherein the WRO value is a function of track spacing.

23. The positioning system of claim 22, wherein the WRO comprises an orthogonal combination of said burst phases.

24. A disk drive comprising:

a disk including multiple tracks, wherein each track includes servo information and data;

a head including a reader element and a writer element;

5 an actuator that is controlled to position the head over selected tracks; and

a head positioning system including a controller that controls the actuator to perform head microjogging on a destination track, such that the destination track is squeezed due to mis-positioning relative to neighboring tracks, wherein the controller microjogs the head by:

10 determining a microjog distance for the destination track;

calculating a microjog correction value based on amount of track squeeze; and

applying the correction value to the microjog distance to obtain a corrected microjog distance that reduces microjog errors due to track squeeze.

25. The disk drive of claim 24, wherein the controller calculates the microjog correction value based on the track squeeze by fitting measured squeeze values to a polynomial curve using a least squares fit algorithm, determining the polynomial coefficients and calculating the microjog correction value based on the location of the destination track location and the polynomial coefficients.

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26. The disk drive of claim 25, wherein the controller calculates the microjog correction value by calculating track squeeze based on the radial location of the

destination track location and the polynomial coefficients, and then calculates the microjog correction value as a function of the calculated track squeeze.

27. The disk drive of claim 26, wherein the controller applies the correction value to the microjog distance by multiplying the calculated track squeeze with the microjog distance to obtain the corrected microjog distance.

28. The disk drive of claim 24, wherein the controller determines the microjog distance for the destination track by determining a microjog profile for the destination track.

29. The disk drive of claim 28, wherein the controller applies the correction value to the microjog distance by applying the correction value to the microjog profile to obtain a corrected microjog profile for the destination track.

30. The disk drive of claim 24 wherein the controller determines track squeeze by measuring track squeeze at a number of locations along multiple tracks in a set of tracks, wherein the squeeze is due to mis-positioning of the tracks relative to one another.

31. The disk drive of claim 30, wherein the controller measures track squeeze by measuring the amount of said track mis-positioning.

32. The disk drive of claim 31, wherein the controller measures the amount of said track mis-positioning by measuring written in runout (WRO) in the track that represent said track mis-positioning.

33. The disk drive of claim 32, wherein the tracks include a plurality of servo wedges embedded therein, each servo wedge including a plurality of circumferentially sequential, radially offset servo bursts, such that controller measures the WRO in each of the multiple tracks by:

5 positioning the head over the track;

 reading the servo bursts in each servo wedge as they pass under the head,
to generate readback signals;

 measuring burst signal values of the servo bursts from the head readback
signals;

10 selecting a plurality of the servo bursts, and obtaining combinations of the
burst signal values of the selected servo bursts to generate one or more burst phases; and

 determining a WRO value for each servo wedge based on said burst
phases, indicating written in runout of the servo bursts relative to neighboring tracks.